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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/014,589	12/14/2001	Tadao Matsumoto	0229-0680P	2029

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EXAMINER

MAKI, STEVEN D

ART UNIT PAPER NUMBER

1733

DATE MAILED: 06/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/014,589

Applicant(s)

MATSUMOTO, TADAO

Examiner

Steven D. Maki

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eD

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2) **Claims 1-2 and 6-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda (US 6112788) and further in view of Nakagawa et al (US 6505661 or JP 2001-55012) and/or Consolacion et al (US 5503206).**

US 6505661 is available as prior art under 35 USC 102(e).

Japan 2001-55012 is available as prior art under 35 USC 102(a). Applicant cannot rely upon the foreign priority papers to overcome this rejection because
(1) the certified copy of the foreign priority document has not been received and
(2) a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

US 6505661 and Japan 2001-55012, which disclose the same subject matter, are applied in the alternative since US 6505661 is available under 35 USC 102(e) whereas Japan 2001-55012 is available under 35 USC 102(a).

Ikeda discloses a pneumatic tire having circumferential grooves. The circumferential groove has a width of 5-20 mm and is for draining water. Ikeda suggests locating a plurality of circumferential ribs at the bottom of the circumferential groove to prevent the bottom of the groove from being cracked. Ikeda teaches that the deepest points of the groove may reside only in the outermost valleys. See figure 4. Hence, Ikeda substantially discloses the claimed invention in that Ikeda teaches a

relatively wide circumferential groove having a width of 5-20 mm and a **continuous groove bottom rib** provided in the top face with a small groove having a depth less than the height of the groove bottom rib. See figure 4. Ikeda does not recite using intermittently disposed knurled parts each made up of small ribs.

As to claim 1, it would have been obvious to one of ordinary skill in the art to provide the circumferential grooves of Ikeda with intermittently disposed knurled parts as claimed in view of (1) the suggestion in Nakagawa et al (US 6505661 or Japan 2001-55012) to use "intermittently disposed knurled parts" *and* circumferential small ribs at the bottom of a wide groove to *prevent bareness of rubber* and/or (2) Consolacion et al's suggestion to use intermittently disposed knurled parts (serrated portions 26) at the bottom of a wide groove to *disperse noise*. With respect to Nakagawa et al, the tire is made using a plurality of sectors m (eight sectors m shown in figure 8) wherein each sector has grooves Mc for forming a group of lateral ribs (knurled parts). Nakagawa et al therefore teaches a tread having a plurality (e.g. eight) spaced (intermittently disposed) groups of knurled parts (lateral ribs 4c at the groove bottom). As to each knurled part being made up of small ribs, see Nakagawa et al's teaching that each sector is provided with at least two lateral rib forming grooves one on each side of the circumferential groove forming rib M1. See col. 4 lines 24-27 of US 6505661. With respect to Consolacion et al, the "knurled parts" (intermittently disposed serrations) lie within grooves (aquachannels 12).

As to the claimed groove width, it would have been obvious to one of ordinary skill in the art to provide the passenger car tire of Ikeda with a circumferential groove

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having a groove width of at least 5% tread width since Ikeda suggests using a groove width of 5-20 mm for the circumferential groove to improve water drainage and optionally (b) it is taken as well known / conventional per se in the tire art to provide circumferential groove(s) of a passenger car tire with a groove width of at least 5% tread width in order to improve drainage (only the expected results (improved wet performance) being obtained.

As to the groove bottom rib having a height of 0.5-3.0 mm, Ikeda teaches that the rib has a height of 0.5-1.0 mm, which falls within the claimed range of 0.5-3.0 mm. The limitation of the groove bottom rib having a base width of 10-30% groove width would have been obvious since Ikeda suggests that the number of small ribs, which have a width of 1-1.5 mm and are spaced by a corresponding width, may be two. With two such small ribs in the figure 4 embodiment, the "groove bottom rib" has a width of 3-4.5 mm. With a 20 mm groove width and a groove bottom width of 3-4.5 mm, the "groove bottom rib" has a width of 15%-22.5%, which falls within the claimed range of 10-30%.

As to claim 2, the claimed depth of 30-60% would have been obvious in view of Ikeda's suggestion that the groove between the small ribs may be shallow as indicated in figure 4.

As to claim 6, Ikeda suggests using two circumferential ribs and thereby suggests only a small circumferential groove between those two circumferential ribs.

As to claims 7-13, the limitations regarding the small ribs as set forth therein would have been obvious in view of the above noted suggestion from Nakagawa et al and/or Consolacion et al to use knurled parts (crosswise ribs) at the bottom of the

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groove. With respect to small ribs, Nakagawa et al teaches extending the relatively lower height lateral ribs 4c laterally in different directions and providing at least two of the lateral ribs in each sector. With respect to small ribs, Consolacion et al teaches inclining the serrations and using them to reduce noise.

As to claim 14, Ikeda shows lateral grooves connecting with the circumferential grooves.

3) Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda and further in view of Nakagawa et al and/or Consolacion et al as applied above and further in view of Japan '508 (JP 2-179508).

As to claim 4, it would have been obvious to provide the circumferential groove with the claimed down slope since Japan '508 suggests forming a down slope at the edges of circumferential grooves to reduce noise and improve wear.

4) Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda and further in view of Nakagawa et al and/or Consolacion et al as applied above and further in view of Europe 480 (EP 646480).

As to claim 4, it would have been obvious to use only one wide circumferential groove in Ikeda's tread since Europe '480 suggests using only one wide circumferential groove as an alternative to plural circumferential grooves to reduce noise while retaining good drainage.

Remarks

5) Applicant's arguments with respect to claims 1, 2, 4-14 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments filed 3-3-04 have been fully considered but they are not persuasive.

Applicant comments that if the knurled parts are formed continuously along the groove then a standing wave will be caused because the resonance mode is not disturbed by the knurling. Examiner comments that the lateral ribs 4c (in contrast to lateral ribs 4b) in Nakagawa et al are not formed continuously. Examiner additionally comments that applicant acknowledges that the "knurled parts" in Consolacion are not formed continuously. See page 8 of response filed 3-3-04.

Applicant argues that the knurled parts are continuously disposed in Nakagawa. This argument is not persuasive since Nakagawa's lateral ribs 4c (in contrast to lateral ribs 4b) are intermittently disposed.

Applicant argues that the intermittently disposed knurled parts in Consolacion et al are between two aquachannels and not along the bottom of any groove that is continuous around the circumference of the tire. Applicant is incorrect since the serrations 26 are in each aquachannel 12. At col. 5 lines 35-40, Consolacion et al states: "[i]n aquachannel 12, where lug 23b stops, serrated portion 26 is contained in the aquachannel". At col. 1 lines 30-33, Consolacion et al defines an aquachannel as being an "extra wide circumferential groove with angled (non parallel), rounded walls designed specifically to improve flow and to channel water out of the footprint contact patch of the tire". Although figure 2 illustrates serrated portions 26 as being between longer lugs which in turn are separated by shorter lugs 23, the serrations 26 remain at the bottom of a continuous circumferential groove since only a portion of the upper

surface of each longer lug is ground contacting (*the remaining portion of the upper surface of the longer lug defines a portion of the bottom of the aquachannel*). The location of the serrations 26 at the bottom of a continuous circumferential groove can best be seen by comparing figure 1 with the footprint shown in figure 5. It is noted that (1) if the longer lugs prevented the aquachannels (extra wide grooves) from being continuous as apparently argued by applicant then the corresponding extrawide circumferential voids in figure 5 would like wise not be continuous and (2) since the extrawide circumferential voids in the footprint of figure 5 are clearly continuous, the longer lugs do not prevent the aquachannels (extra wide grooves) from being continuous.

6) No claim is allowed.

7) Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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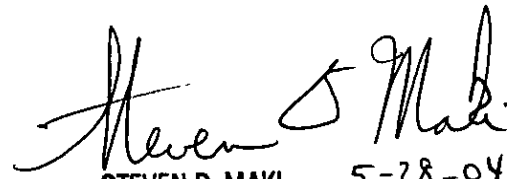
the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven D. Maki
May 28, 2004


STEVEN D. MAKI
PRIMARY EXAMINER
~~GROUP 1300~~
AU 1733
5-28-04